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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO:
1-1-00-F-92

December 18, 2000

Mr. David Nichol
Federal Highway Administration
(Attn.: Ms. Joan Bollman)
980 Ninth Street, Suite 400
Sacramento, California 95814-2724

Subject: Formal Endangered Species Consultation on the Proposed Devil's Slide Tunnel Bypass Project, State Highway 1, Pacifica, San Mateo County, California

Dear Mr. Nichol:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion on Federal Highway Administration's (FHWA) proposal, in conjunction with California Department of Transportation (Caltrans), to construct the Devil's Slide project on Highway 1 in San Mateo County, and project effects on the federally threatened California red-legged frog (*Rana aurora draytonii*) (red-legged frog) and conference on the proposed critical habitat for this species. The project, as proposed, is not likely to adversely affect the federally endangered San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) and will affect the delisted American peregrine falcon (*Falco peregrinus anatum*). This opinion is provided in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act). Your January 27, 2000, request to initiate consultation was received in our office January 31, 2000, and your October 17, 2000, request for conferencing on the red-legged frog critical habitat was received in our office on the same day, October 17, 2000.

This biological opinion is based on information provided in (1) the December 15, 1999, Biological Assessment, (2) information in Service files; (3) numerous field visits, meetings, and telephone conversations with Cecilia Brown, Sheila Larsen, and Michael Thabault of my staff, Sid Shadle and Richard Vonarb of Caltrans, and Dr. Samuel McGinnis, biological consultant.

Consultation History

August 25, 1986: The Service issued a biological opinion on the Martini Creek alignment alternative (Service file 1-1-86-F-88).

November 1996: Citizens of San Mateo County passed a ballot initiative to allow construction of the tunnel bypass alternative.

January 1997: California Coastal Commission specified the tunnel as the preferred bypass alternative for Devil's Slide.

1997-2000: Service staff met with staff from Caltrans, FHWA, and with Dr. McGinnis to discuss minimization measures appropriate to protect the red-legged frog from adverse effects during and after highway construction.

January 27, 2000: FHWA initiated formal consultation on the tunnel bypass alternative.

March 16, 1999: FHWA published the Second Supplement to the 1986 Final Environmental Impact Statement/Environmental Impact Report for the project.

June 16, 2000: Service staff met with Caltrans staff and consultants to discuss location and construction details of the third pond.

July 20, 2000: Caltrans submitted additional information on construction and red-legged frog impact minimization measures to the Service.

September 26, 2000: The Service determined that construction of a third pond and diversion structure at the project site and the planting of aquatic emergent vegetation was not likely to result in take of the red-legged frog (Service file no.: 1-1-00-TA-2980).

October 17, 2000: FHWA requested a formal conference on the effects of the project on proposed critical habitat for the red-legged frog.

BIOLOGICAL OPINION

Description of Proposed Action

Action Area

Highway capacity will not increase, so tunnel construction will not facilitate growth. Therefore, the action area of the project is confined to Shamrock Ranch and the construction footprint.

Project Overview and Tunnel

Caltrans proposes to construct a permanent new highway to bypass the Devil's Slide portion of California State Highway 1. Devil's Slide is geologically unstable and has been subjected to numerous landslides, rock falls, and subsidence events since construction of the highway in

1937. Proceeding south from Pacifica, the new alignment will depart from the existing Highway 1 and bridge a small valley at Shamrock Ranch approximately 0.5 km (0.3 mi.) south of Linda Mar Boulevard in Pacifica (Figure 1). The tunnel would pass through San Pedro Mountain approximately 0.4 km (0.25 mi.) inland of the existing highway.

Two parallel tunnels of 1,219 meters (m) [4,000 feet (ft.)] will be drilled and blasted through the hill. Each tunnel will be 9.1 m (30 ft.) wide and will provide a single traffic lane. An estimated 724,000 cubic yards of material will be excavated. The majority of the tunnel excavation will occur from the south portal. Some blasting and excavation will occur at the north end of the tunnel when the north portal is constructed. Caltrans will dispose of excavated material on an upland site approximately 90 m (300 ft.) from the south tunnel portal. When construction is completed, the disposal site will be graded and planted with native coastal scrub species.

Bridge Construction

Two bridges, one for each traffic lane, will connect the existing highway to the tunnel and cross the small valley on Shamrock Ranch. The proposed bridges would be approximately 36.5 m (120 ft.) above the valley floor. Bridges will be constructed in a manner as to avoid direct impacts to aquatic habitat. They will be constructed by a segmented balanced cantilever method. Four bridge piers will be constructed on uplands, and the bridges will be built out from these piers, then connected to the existing highway and the north tunnel portal. The northbound lane will shade a portion of Shamrock Ranch's north pond. The bridges will be constructed so that roadway runoff will be contained and directed northward to a drainage on the existing Highway 1. This drainage does not enter the red-legged frog ponds.

Access Road

Caltrans will construct dirt roads on uplands through Shamrock Ranch for access to the four bridge pier sites and the north tunnel portal. The road will consist of a single lane, 6.5 m (21 ft.) wide with traffic controllers and limited turnouts. The access road lies between the two ponds; therefore, the entire length of the road will be surrounded with protective fencing to prevent red-legged frogs from crossing the road (Figure 1). Where side slopes are steep, Caltrans will construct timber retaining walls to eliminate the necessity of cut and fill on the hillsides. The portion of the road providing access to the north tunnel portal will pass within 18 m (59 ft.) of the south pond.

Construction of the temporary access roads will be limited to the dry season (April 15 to October 15). A solid fence will surround the entire road to minimize impacts to red-legged frogs. The fence will also direct surface runoff to small temporary desilting basins. Caltrans will remove silt from these basins when they become one-third full. After the bridges are complete, access roads will be regraded to match original ground contours as closely as possible. The site will be revegetated over a three-year period and monitored for an additional two years.

Conservation Measures

To avoid and minimize impacts to listed and sensitive species, Caltrans has proposed the following measures:

A. During the fall of 2000, Caltrans will construct a third pond, and is referred to as the "new pond" (Service File No. 1-1-00-TA-2980). The new pond will contain locally collected native aquatic emergent vegetation, propagated in wooden flats during the summer and fall of 2000. Frog-proof fencing will be installed around the new pond to contain resident adults. There will be an electric fence component of the frog-proof fencing to keep raccoons and other terrestrial predators away from the pond.

B. The Service will conduct a field inspection of the new pond on or about April 15, 2001. If the Service approves the new pond habitat, red-legged frog adults will be trapped from the north pond between April 15 and June 30, 2001, and moved to the new pond, constructed in the fall of 2000. Traps will consist of a five-gallon plastic bucket with a hardware cloth funnel. Buckets will be placed at each end of an aquatic drift fence consisting of two-foot-high fine mesh hardware cloth. Traps will be checked daily. Prior to transfer to the new pond, all captured red-legged frogs will be measured, weighed, sexed, and marked.

C. Biologists, hired or contracted by Caltrans, will conduct weekly shoreline surveys of the north pond from January through March 2001, to search red-legged frog egg masses. If any are found, they and the vegetation to which they are attached, will be moved to the inshore zone of the new pond.

D. Prior to project initiation, a qualified biologist will capture all red-legged frogs from the north pond area and move them to the new pond. The fence around the new pond will remain in place during the construction project to prevent red-legged frogs from reentering the work area. Entrance funnels and traps will be used every fall to trap any adult red-legged frogs which migrate to the north pond during all subsequent construction years.

E. Caltrans will designate an environmentally sensitive area where no construction activities will occur. The north pond will be fenced, as will the temporary access roads. The fence will consist of 4-ft. by 8-ft. sheets of wafer board or pressure treated plywood and be supported by metal T-shaped farm fence posts placed at approximately 4-ft. intervals.

F. Qualified biologists will be on site during construction activities to remove any remaining red-legged frogs and tadpoles. All captured bullfrogs (*Rana catesbeiana*) and other nonnative aquatic species will be euthanized and/or disposed of in a manner complying with California Department of Fish and Game Codes. Japanese koi carp will be captured from the south pond and disposed of in a manner in compliance with California Department of Fish and Game Codes and agreeable to the Shamrock Ranch owner.

The largest densities of red-legged frogs currently are associated with deep pools with stands of overhanging willows and an intermixed fringe of cattails (*Typha latifolia*) (Jennings 1988). However, red-legged frogs also have been found in ephemeral creeks and drainages and in ponds that may or may not have riparian vegetation. Red-legged frogs disperse upstream and downstream of their breeding habitat to forage and seek sheltering habitat. Sheltering habitat for red-legged frogs potentially includes all aquatic, riparian, and upland areas within the range of the species and any landscape features that provide cover, such as existing animal burrows, boulders or rocks, organic debris such as downed trees or logs, and industrial debris. Agricultural features such as drains, watering troughs, spring boxes, abandoned sheds, or hay ricks may also be used. Incised stream channels with portions narrower than 18 inches and depths greater than 18 inches also may provide important summer sheltering habitat. Accessability to sheltering habitat is essential for the survival of red-legged frogs within a watershed and can be a factor limiting frog population numbers and survival. During winter rain events, juvenile and adult red-legged frogs are known to disperse up to 1-2 km (Rathbun and Holland, unpublished data, cited in Rathbun *et al.* 1991).

Egg masses contain about 2,000 to 5,000 moderate sized (2.0 to 2.8 mm (0.08 to 0.11 inches) in diameter), dark reddish brown eggs and are typically attached to vertical emergent vegetation, such as bulrushes (*Scirpus* spp.) or cattails (Jennings *et al.* 1992). Red-legged frogs are often prolific breeders, laying their eggs during or shortly after large rainfall events in late winter and early spring (Hayes and Miyamoto 1984). Eggs hatch in 6 to 14 days (Jennings 1988). Increased siltation during the breeding season can cause asphyxiation of eggs and small larvae. Larvae undergo metamorphosis 3.5 to 7 months after hatching (Storer 1925, Wright and Wright 1949, Jennings and Hayes 1990). Of the various life stages, larvae probably experience the highest mortality rates, with less than 1 percent of eggs laid reaching metamorphosis (Jennings *et al.* 1992). Sexual maturity normally is reached at 3 to 4 years of age (Storer 1925, Jennings and Hayes 1985). Red-legged frogs may live eight to 10 years (Jennings *et al.* 1992).

The diet of red-legged frogs is highly variable. Hayes and Tennant (1985) found invertebrates to be the most common food items. Vertebrates, such as Pacific tree frogs (*Hyla regilla*) and California mice (*Peromyscus californicus*), represented over half the prey mass eaten by larger frogs (Hayes and Tennant 1985). Hayes and Tennant (1985) found juvenile frogs to be active diurnally and nocturnally, whereas adult frogs were largely nocturnal. Feeding activity probably occurs along the shoreline and on the surface of the water (Hayes and Tennant 1985). Larvae likely eat algae (Jennings *et al.* 1992).

Several researchers in central California have noted the decline and eventual disappearance of red-legged frog populations once bullfrogs became established at the same site (L. Hunt, in litt. 1993, S. Barry, in litt. 1992, S. Sweet, in litt. 1993). This has been attributed to both predation and competition. Twedt (1993) documented bullfrog predation of juvenile northern red-legged frogs, and suggested that bullfrogs could prey on subadult red-legged frogs as well. In addition to predation, bullfrogs may have a competitive advantage over red-legged frogs: bullfrogs are larger, possess more generalized food habits (Bury and Whelan 1984), possess an extended

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breeding season (Storer 1933) where an individual female can produce as many as 20,000 eggs during a breeding season (Emlen 1977), and larvae are unpalatable to predatory fish (Kruse and Francis 1977). In addition to competition, bullfrogs also interfere with red-legged frog reproduction. Both California and northern red-legged frogs have been observed in amplexus with (mounted on) both male and female bullfrogs (Jennings and Hayes 1990, Twedt 1993, M. Jennings, in litt.1993, R. Stebbins in litt. 1993).

Proposed Critical Habitat

On August 31, 2000, a proposed rule designating critical habitat for the red-legged frog was published in the *Federal Register* (65 FR 54891; Service 2000a). A detailed account of the primary constituent elements for red-legged frog critical habitat is found in the proposed rule (Service 2000a). In designating critical habitat, the Service identified the following primary constituent elements essential to the conservation of the red-legged frog: suitable aquatic habitat, associated uplands, and suitable dispersal habitat connecting suitable aquatic habitat.

Aquatic Habitat. Suitable aquatic habitat consists of virtually all permanent still or slow-moving fresh water bodies, including natural and manmade ponds, backwaters within streams and creeks, marshes, lagoons, and dune ponds, except deep lacustrine habitat. Aquatic habitat suitable for breeding must have a minimum depth of 20 cm and maintain water during the entire tadpole rearing season (at least March through July). To be considered a critical habitat, the aquatic component must consist of two or more breeding sites located within 2 km of each other, if at least one of the sites is also a permanent water source, or two or more breeding sites and a permanent water source located within 2 km, if the breeding sites are not permanent water sources.

The south pond contains sufficient permanent water, space, food, and cover needed to sustain red-legged frog eggs, tadpoles, metamorphosing juveniles, subadults, and adults. In addition, this pond is located less than 2 km from San Pedro Creek, which supports breeding red-legged frogs. Caltrans will ensure that the new pond has sufficient water depth and vegetative cover to provide aquatic habitat for the species. The north pond does not sustain sufficient water at appropriate depth and temperature to sustain tadpoles until metamorphosis and, therefore, would not be considered critical habitat.

Associated Uplands: Associated uplands must provide food, nutrients, and protection from disturbance necessary for normal behavior. Key conditions include the timing, duration, and extent of water moving within the system, filtering capacity, and maintaining of habitat to favor red-legged frogs. Suitable upland habitat consists of all upland areas within 150 m (492 ft.), or no further from the watershed boundary, from the edge of suitable aquatic habitat. Uplands within 150 m (492 ft.) of the red-legged frog ponds on Shamrock Ranch consist of horse pastures surrounded by coastal scrub. Ground cover at the ponds and in the pasture have improved dramatically over the past five years, and the pasture provides sufficient cover and foraging area for normal behavior. The pasture also provides sufficient filtering capacity to prevent sediment-

laden runoff from entering any of the three ponds. The north pond has filled with silt to the point that it does not support red-legged frog breeding, the source of this sediment is not the horse pasture but rather the drainage that provides the water source for this pond.

Dispersal Habitat: Suitable dispersal habitat must be least 150 m (492 ft.) wide, consisting of all upland and wetland areas that are free of barriers connecting two or more patches of suitable aquatic habitat within 2 km (1.24 mi.) of one another. Dispersal barriers include, but are not limited to, heavily-traveled roads, moderate to high density urban or industrial developments, and large reservoirs. Agricultural lands such as row crops, orchards, vineyards, and pastures do not constitute barriers to red-legged frog dispersal. Shamrock Ranch is a large property with moderately dense development on less than ten acres of land located northeast of the ponds. The remainder of the property and the area south and east of the ranch is undeveloped and rural. The ponds drain into a tributary that flows both above and below ground into San Pedro Creek. Red-legged frogs can disperse down the drainage and travel overland to reach San Pedro Creek. Red-legged frogs can also disperse to the San Pedro Creek drainage to the northeast, where the species is known to occur.

Environmental Baseline

The environmental baseline used in this analysis includes past and ongoing impacts of Federal, State, Tribal, and private actions and other human activities in the vicinity of the project that have impacted, or are impacting the listed species.

Red-legged frogs have been extirpated or nearly extirpated from more than 70 percent of their historic range. Historically, this species was found throughout the Central Valley and Sierra Nevada foothills. As of 1996, red-legged frogs were known to occur in approximately 240 streams or drainages from 23 counties, primarily in central coastal California, Monterey, San Luis Obispo, and Santa Barbara counties support the largest extent of currently occupied habitat. The most secure aggregations of red-legged frogs are found in aquatic sites that support riparian and aquatic vegetation and lack non-native predators. Several researchers in Central California have noted the decline and eventual local disappearance of red-legged frogs in systems supporting bullfrogs (Jennings and Hayes 1990), red swamp crayfish (*Procambarus clarkii*), signal crayfish (*Pacifastacus leniusculu*), and several species of warm water fish including sunfish (*Lepomis* spp.), goldfish (*Carassius auratus*), common carp (*Cyprinus carpio*), and mosquitofish (*Gambusia affinis*) (L. Hunt, in litt. 1993, S. Barry, in litt. 1992, S. Sweet, in litt. 1993). Habitat loss, non-native species introduction, and urban encroachment are primary factors that currently pose the greatest threats to the red-legged frog throughout its range.

The draft recovery plan for the red-legged frog identifies eight Recovery Units. Within each Recovery Unit, core areas have been delineated and represent areas of moderate to high red-legged frog densities and are identified as areas where recovery actions will be focused. This project is located within a Core Area of the Central Coast Recovery Unit, which includes western

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San Mateo and Santa Clara Counties, and portions of Santa Cruz, Monterey, and San Luis Obispo Counties.

The Core Area extends from Crystal Springs Reservoir west to Half Moon Bay and Pacifica. Within this Core Area, red-legged frogs historically bred in sag ponds which were common within this area. However, few sag ponds remain as they have been filled for urban development. The lack of available breeding sites within the Core Area has lead to the decline of the red-legged frog.

The red-legged frog has been found in two ponds, referred to as the north pond and south pond, at the western end of Shamrock Ranch near the north tunnel portal. The south pond appears to retain water year round of sufficient quantity and temperature to support breeding of red-legged frogs. However, successful breeding was not documented at this site during surveys for this project (McGinnis 1998). This pond contains a population of introduced Japanese koi carp, which may be preying upon eggs and tadpoles. The north pond covers a larger area. However, it is shallow and the water levels drop rapidly during the summer. Early drying of ponds increases the likelihood of predation by waterfowl and raccoons. McGinnis (1998) has concluded that in many years water levels in this pond are not of sufficient depth to support tadpoles through metamorphosis. Lands surrounding the project area are undeveloped and support primarily coastal scrub, which provides suitable habitat for upland cover and forage, and suitable habitat for dispersal.

The most recent surveys by qualified biologists at the site occurred from March 1997 through February 1998 (McGinnis 1998). The south pond retains sufficient water to support tadpoles through the metamorphosis; however, a population of introduced koi carp may be preying upon the eggs, severely reducing the likelihood of successful reproduction. The north pond, although larger in area, is shallower, and water temperatures probably get too high in the summer to allow red-legged frog tadpoles to mature. Red-legged frog adults are documented routinely at this pond.

Within the greater Pacifica area, which is within the Core Area of the Central Coast Recovery Unit, the Service issued a biological opinion to the U.S. Army Corps of Engineers (Corps) addressing the impacts of the Calera Creek Water Recycling Plant and Wetland Restoration project (Service file no. 1-1-96-F-163) to the U.S. Army Corps of Engineers. The project included realigning and restoring Calera Creek as well as constructing two new ponds to replace two quarry ponds that had previously been drained and filled without incidental take authorization. Red-legged frog surveys conducted in 1999 found frogs breeding within the new ponds and they were also found in Calera Creek. It is believed that these ponds may have been recolonized, in part, from red-legged frogs that moved from Laguna Salada to Calera Creek over uplands commonly known as Mori Point. During fall of 2000, a portion of Mori Point was purchased by The Trust for Public Lands for the purpose of maintaining open space. Red-legged frogs found in Laguna Salada and the lower section of Calera Creek may move up the Calera Creek watershed and disperse to Crystal Springs and Shamrock Ranch, and vice versa, thereby

providing genetic interchange between populations found in this portion of the Central Coast Recovery Unit.

The Service issued a biological dated March 27, 1997, to the Corps for the San Pedro Creek Flood Control Project (Service File no. 1-1-96-F-164). Project construction began in the fall of 2000. The project involves the reconfiguring and restoration of the San Pedro Creek from below the Adobe Drive bridge to the Pacific Ocean. The project included widening the flood plain, recreating sinuosity and backwaters, and removal of instream barriers. After construction the area will be planted with native vegetation. This project is expected to provide habitat for red-legged frogs.

Effects of the Proposed Action

Effects to the red-legged frog include direct effects to individual frogs and habitat during construction, indirect effects to frogs and their habitat within the project area vicinity, and cumulative effects to the local red-legged frog population. This project also will have direct and indirect effects on proposed critical habitat.

Direct Effects

Direct effects include the potential for harassment, injury, and mortality of juveniles and adults. Red-legged frogs will be affected directly when they are captured from the north pond and moved to the newly created third pond. Red-legged frogs that are moved may be subjected to physiological stress and may be disoriented and attempt to leave the pond. While attempting to leave the pond, frogs may be exposed to an increased stress level, which may decrease the physical fitness of individuals. In addition, frogs attempting to leave may expose themselves to avian predators. In the unlikely event that frogs enter the environmentally sensitive area, the possibility exists that individual frogs may be crushed if they disperse across the construction access road. No aquatic or wetland habitat will be disturbed while constructing the environmentally sensitive area fence construction, and this fence will keep construction activities from directly impacting the habitat.

The project will result in the temporary loss of red-legged frog nonbreeding and foraging habitat, specifically 0.4 acre in the north pond. This effect will be offset by the creation of the new pond, which will provide dispersal, foraging and breeding habitat. Because the north pond will be deepened after completion of the bridge construction, there will be a net increase in red-legged frog breeding habitat at the site as a result of this project. Long-term impacts from shading following bridge construction are expected to be minimal, as the bridges have a north-south alignment and will be perpendicular to the direction of the sun's travel.

Petrochemicals, soaps or solvents that are spilled or may be leaking from vehicles could kill red-legged frogs during all life stages. Sediment washing downstream after storm events could

suffocate embryos and tadpoles. Trapping or relocating red-legged frogs during the breeding season could cause reproductive failures as a result of stress.

Normal construction activities are likely to result in direct effects to red-legged frogs through spills and intrusion into habitat areas by crews and equipment. Noise and vibration from blasting at the north tunnel portal and the use of heavy equipment is expected to harass red-legged frog adults foraging near the project area. Frogs displaced by construction or other disturbance may be required to compete for food and living space with animals in adjacent areas. Petrochemicals, soaps or solvents leaking or spilled from vehicles could kill red-legged frog adults, embryos or tadpoles. Sediment washing downstream after storm events could suffocate embryos or tadpoles.

Draining the south pond is likely to harass red-legged frogs, and they may be killed or injured during the koi removal effort. There is expected to be some level of trap mortality associated with trapping and translocating frogs. The frog exclusion fences may fail, or trap frogs on the wrong side, leading to increased mortality. Eggs may coddle as a result of inadvertent inversion or dessication during transport. Adult frogs being transported may be subjected to diseases as a result of stress and dessication.

Indirect Effects

The grading and regrading at the site is likely to alter the soil horizon to such an extent that reestablishment of existing vegetation type may be difficult and problematic. In addition, disrupted soil profiles tend to favor establishment of exotic, noxious weeds.

Adverse indirect effects include the potential for increased sedimentation downstream from the project as a result of the construction activities. Runoff from the dirt access road and regraded portions of the access road may carry sediment to the north pond. The presence of construction crews on site could result in an increase in on-site trash and could attract potential predators, such as skunks and racoons.

Red-legged frogs are likely to benefit over time by the removal of koi from the south pond. Red-legged frogs placed in the new pond may be subjected to increased predation and decreased foraging until the pond establishes a well-established shoreline cover and prey-base. Once the new pond becomes fully established, the local red-legged frog population is expected to benefit. However, without targeted management actions and maintenance, the ponds are likely to sediment in and become overgrown over time.

Effects to Proposed Critical Habitat

The construction access roads will cover portions of the upland and dispersal elements of red-legged critical habitat. The portion of the road providing access to the tunnel portal will pass within 18 m (59 ft.) of the south pond at its closest point. The existing Highway 1, which already

constitutes a significant barrier to red-legged frog dispersal to the north and west, is parallel to the construction access road. Therefore, the addition of the access road will not appreciably reduce red-legged frog dispersal. Deepening the north pond to make it appropriate for red-legged frog breeding and creating the new pond will enhance the quality of critical habitat on site.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The proposed raising of Crystal Springs Reservoir will significantly impact a known breeding population of red-legged frogs within the central coast range. The increase in water level will further subject the remaining breeding habitat to periods of flooding and drying related to water use by the San Francisco Public Utility Company. The loss of breeding habitat at Crystal Springs would severely decrease the red-legged frog population within this Core Area.

Continued urban growth in coastal cities such as Pacifica and Half Moon Bay, such as home construction, roads, and flood control projects, threaten remaining red-legged frog aquatic habitat, upland habitat, and dispersal corridors. Aside from the direct loss of habitat from construction, subsequent irrigation of lawns may cause an intermittent streams to become perennial, providing breeding habitat for the bullfrog. Urban development results in increased numbers of cats and dogs. Both feral and tame cats and dogs prey on aquatic and riparian species such as the red-legged frog. People exploring creeks can harass, collect and kill red-legged frogs. Many flood control projects enlarge stream channels and isolate them from their natural floodplains, disrupting natural hydrologic processes and degrading stream habitat. Flood channel maintenance often requires the removal of emergent aquatic and riparian vegetation, making these channels less suitable for red-legged frogs. Row crops grown in the small valleys along the coast load pollutants such as sediment, fertilizers, and pesticides to area creeks and ponds. Some streams may be channelized or moved to provide more space for crop production. Some hills along the coast are severely overgrazed, which can be detrimental to upland and aquatic habitat essential for red-legged frog survival.

Non-native species that prey upon, or compete with, red-legged frogs continue to be released in red-legged frog critical habitat. Bullfrogs, koi, goldfish, mosquito fish and warm water game fish species are all expected to continue to degrade the quality of red-legged frog habitat and prey upon red-legged frogs.

Conclusion

After reviewing the current status of the species, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion

that the Devils Slide Tunnel Bypass, including the conservation measures proposed, is not likely to jeopardize the continued existence of the red-legged frog or destroy or adversely modify proposed critical habitat.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. The Service defines harass as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the Act, provided such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary and must be implemented by FHWA so that they become binding conditions of any grant or permit issued to Caltrans, as appropriate, in order for the exemption in section 7(o)(2) to apply. FHWA has a continuing duty to regulate the activity covered by this incidental take statement. If FHWA (1) fails to require Caltrans to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

The Service anticipates incidental take of the red-legged frog will be difficult to detect or quantify because of: the elusive nature of this species, its small size, and cryptic coloration make the finding of a dead specimen unlikely. Therefore, take is estimated by the number of acres in which red-legged frogs could be killed, harassed, or harmed through trapping, capture and collection associated with this project. Upon implementation of the reasonable and prudent measures, take in the form of killing, harming, and harassing resulting from trapping, capturing and collecting and construction activities of red-legged frogs on approximately 10.67 acres of habitat, of which 0.85 acre is aquatic or wetland, as a result of the activities associated with the project will become exempt from the prohibitions described under section 9 of the Act for direct and indirect impacts. This exemption only applies to Caltrans staff whose duties involve implementation of the proposed project; individuals or contractors hired or contracted by

Caltrans to perform duties described in this opinion; or biologists hired using trust funds held for the conservation of red-legged frogs. The Service has developed the following incidental take statement based on the premise that the reasonable and prudent measures will be implemented. Upon implementation of the following reasonable and prudent measures, incidental take associated with the Devil's Slide tunnel project will become exempt from the prohibitions described under section 9 of the Act for direct and indirect impacts.

Effect of the Take

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the red-legged frog or destruction or adverse modification of proposed critical habitat.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the impacts of take on the listed species:

1. Minimize the impact of direct effects to all life stages of the red-legged frog and its proposed critical habitat from construction.

2. Minimize the impact of indirect effects to red-legged frogs from construction.

3. Minimize the impact of take of red-legged frogs from future bridge maintenance activities.

Terms and Conditions

To be exempt from the prohibitions of section 9 of the Act, FHWA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

1. To implement reasonable and prudent measure number one FHWA shall ensure the following terms and conditions are met:

    a. Caltrans shall implement the project, along with the proposed protection measures for red-legged frogs, as described in the proposed project description.

    b. Individuals that handle and remove red-legged frogs, tadpoles or egg masses must be pre-approved by the Service prior to trapping, capturing or collecting on-site.

    c. Red-legged frogs shall be marked only with Service approval. The method of marking red-legged frogs must be approved by the Service.

d. Annual management at the mitigation pond shall be determined each year based on the anticipated carrying capacity of the pond. The determination as whether or not to move egg masses, where those egg masses shall be moved to, or allow the red-legged frogs to disperse from the new pond shall be at the Service's discretion. Experimental releases of adult and newly metamorphosed red-legged frogs fitted with radio-transmitters or PIT tags shall be at the Service's discretion in cooperation with Caltrans.

e. All translocated or moved egg masses shall be monitored daily to determine the level of coddling.

f. Regular inspection of the fence around the construction access road and the north pond shall ensure that red-legged frogs do not cross the road or enter the north pond. Caltrans shall install an electric fence around the new pond fence to prevent mammalian predation.

g. The trapping dates of April 15 through June 30, 2000, set forth in the Minimization Measures may be changed at the Service's discretion.

h. Caltrans shall install sediment control structures around the perimeter of the dirt access road where runoff is likely to drain to any of the three ponds or the creek. Any silt control structures that breach or become damaged during a storm event shall be repaired or replaced within 24 hours. Any straw/hay bales that may be used for sediment control shall be free of star thistle seed.

i. Caltrans personnel shall inspect the environmentally sensitive area fence every day when construction activities are being conducted for openings and/or breaks in the fence that would allow red-legged frogs to enter the construction area. The exception to this is when construction activities are occurring solely on the bridges and no traffic is within the environmentally sensitive area. Any openings in the fence where red-legged frogs could enter the environmentally sensitive area shall be repaired within 12 hours.

j. Before any construction activities begin on the project, a Service-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of the natural history red-legged frog and its habitat, the importance of the red-legged frog and its habitat, the general measures that are being implemented to conserve the red-legged frog as they relate to the project, the penalties for non-compliance, and the boundaries (work area) within which the project may be accomplished. Training sessions shall be repeated for all new employees before they access the project site. Sign up sheets identifying attendees and the contractor/company they represent shall be provided to the Service within one week of such training.

k. A Service-approved biologist shall be present at the work site until all red-legged frog removal and worker instruction have been completed.

l. Stockpiling of construction materials, including portable equipment, vehicles and supplies, including chemicals, will be restricted to the designated construction staging areas.

m. Refueling of construction equipment and vehicles may not occur within 300 feet of any water body or anywhere that spilled fuel could drain to a water body. Caltrans shall check and maintain equipment and vehicles operated in the project area daily to prevent leaks of fuels, lubricants or other fluids.

n. Equipment may not be washed in a place where wash water could drain to the creek or the ponds.

o. Caltrans shall clean hazardous material spills immediately. Such spills shall be reported to the Service immediately. Spill cleanup and remediation shall be detailed in post-construction compliance reports.

p. Caltrans shall comply with all reporting requirements in this opinion, including those proposed in the project description.

2. To implement reasonable and prudent measure number two FHWA shall ensure the following terms and conditions are met:

a. Caltrans shall remove litter and construction debris from the construction site daily and contain the waste at an appropriate site. All trash that may attract predators shall be securely covered at all times in locking metal containers, removed from the work site and disposed of regularly. Following construction, all trash and construction debris shall be removed from the work areas.

b. No captured bullfrogs shall be released back into the wild.

3. To implement reasonable and prudent measure number three FHWA shall ensure the following terms and conditions are met:

a. Prior to implementation, future bridge maintenance activities and remedial actions that may impact red-legged frog habitat must be reviewed and approved by the Service.

b. If Caltrans is unable to secure a Service approved conservation easement as proposed in the *Conservation Measures*, Caltrans must secure a Service approved off-site mitigation area or other agreement satisfactory to the Service.

c. Caltrans shall provide an endowment to provide for management of the conservation easement area and a copy of the endowment agreement to the Service for review and approval prior to construction. The agreement shall contain specific information on the endowment to manage the site for the red-legged frog in perpetuity.

d. Caltrans shall prepare and implement a detailed habitat monitoring plan within the proposed conservation easement. The plan shall provide, but not be limited to, specific performance standards, monitoring methods and requirements, exotic species control (plant and animal), and contingency measures for habitat to be restored and managed for red-legged frogs. The site shall provide hydrologic stability, habitat complexity, and food production potential. Caltrans shall submit the final plan to the Service for review and approval prior to initiation of any project work.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. With implementation of these measures, the Service believes that take of all individuals within ~~7.75~~ 10.67 acres of red-legged frog habitat will be minimized.

If during the course of the action, this level of incidental take is exceeded, or take in a form not described in this opinion occurs, such incidental take represents new information requiring review of the reasonable and prudent measures. FHWA must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Reporting Requirements

The Service must be notified within 24 hours of the finding of any injured or dead red-legged frogs, or any unanticipated damage to the species habitat associated with project construction, minimization measures, or operation. Notification must include the date, time, and precise location of the specimen/incident, and any other pertinent information. The Service contact person is Karen J. Miller, Chief, Endangered Species Division in the SFWO, at (916) 414-6620. Any dead or injured specimens will be reposited with the Service's Division of Law Enforcement, 2800 Cottage Way, Sacramento, California 95825, telephone (916) 414-6660.

Caltrans shall notify the Service within 90 days after completion of the project. A written report shall be submitted containing, at a minimum, the following information: (1) a brief summary of project actions; construction methods and materials used in the environmentally sensitive area fence; (2) the number of nonnative species removed from the project site; (3) the number and age class of red-legged frogs removed from the north pond; (4) any problems that occurred which might have prevented compliance with this biological opinion; and (5) methods to avoid these problems in the future. Photographs documenting the frog fencing and work progress should be included. Please reference the Service's file number in the subject line of the report. The report

should be sent to: U.S. Fish and Wildlife Service, Endangered Species Division, 2800 Cottage Way, Room W-2605, Sacramento, California 95825-1846.

The Service shall be notified within twenty-four (24) hours of the finding of any injured or dead red-legged frogs or any unanticipated harm to their habitat addressed in this biological opinion. Notification shall include the date, time, and precise location of the specimen/incident, and any other pertinent information. The Service contact person is Karen J. Miller, Chief, Endangered Species Division in the SFWO (916-414-6620). Any dead or injured specimen shall be deposited with the Service's Division of Law Enforcement, 2800 Cottage Way, Sacramento, California 95825, telephone (916) 414-6660.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to implement recovery actions, to help implement recovery plans, to develop information, or otherwise further the purposes of the Act.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations. We have the following recommendations:

1. The FHWA should host a series of meetings with Caltrans, the San Mateo County, California Department of Fish and Game, and the Service to discuss issues related to ongoing impacts to numerous federally listed species found within the Highway 1 corridor.

2. FHWA should implement conditions from the draft *Recovery Plan for the California red-legged frog* where their action(s) may affect the red-legged frog or its habitat. Some conditions for implementation include best management practices to maintain natural riparian habitat, compensation for habitat lost or impacted, and reduction in or avoidance of rock or concrete in streams and other water bodies;

3. FHWA should participate in the recovery planning process for the red-legged frog;

4. FHWA should participate in the recovery planning process for the San Francisco garter snake.

Mr. David Nichol

REINITIATION–CLOSING STATEMENT

This concludes formal consultation on the actions outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this opinion, please contact Sheila Larsen or Ken Sanchez at (916) 414-6625.

Sincerely,

Cay C. Goude
Acting Field Supervisor

Enclosures

cc: ARD (ES), Portland, OR
California Department of Transportation, Oakland, CA

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United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO:
1-1-03-F-0151

MAR 2 5 2004

Mr. Gary Hamby
Division Administrator
Federal Highway Administration
(Attn: Khoi Khau)
980 Ninth Street
Sacramento, California 95814-2724

FILE COPY

Subject: Reinitiation of Formal Endangered Species Consultation on the Devils Slide Tunnel, State Highway 1, Pacifica, San Mateo County, California, FHWA file HCA-CA # 04-SM-1-36.6/41.0

Dear Mr. Hamby:

This is in response to your request to reinitiate formal consultation on the Federal Highway Administration's (FHWA) proposal, in conjunction with California Department of Transportation (Caltrans), to construct the Devil's Slide project on Highway 1 in Pacifica, San Mateo County, California, and project effects on the federally threatened California red-legged frog (*Rana aurora draytonii*) (red-legged frog). This opinion is provided in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act). The U.S. Fish and Wildlife Service (Service) received your April 8, 2003, request to reinitiate consultation on April 9, 2003.

This biological opinion amendment is based on (1) information provided in the letter of reinitiation; (2) meetings, telephone conversations, and correspondence between Service staff and Caltrans staff, and (3) information in Service files. A complete administrative record of this opinion is on file at the Sacramento Fish and Wildlife Office.

Caltrans proposes to construct a permanent new highway to bypass the Devil's Slide portion of California State Highway 1, which will consist of a tunnel through San Pedro Mountain and a bridge over a small valley at Shamrock Ranch. The FHWA is reinitiating consultation because the incidental take will exceed the amount originally anticipated for this project. The Service originally exempted incidental take of red-legged frogs on 10.67 acres of aquatic and upland

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habitat near the tunnel's north portal. Adverse effects to the frog near the north portal will be temporal in nature. No permanent habitat loss will occur at this site. Caltrans has determined that additional red-legged frog habitat loss will occur at the south portal. In 2002, in response to requirements of the Coastal Commission, Caltrans conducted additional surveys in intermittent drainages adjacent to the south portal and fill disposal sites. Red-legged frogs were found during four surveys in the south portal drainage. No red-legged frogs were found in the fill disposal drainage.

Permanent fill will be placed in the south portal drainage when the south portal is constructed. This drainage is considered sheltering and dispersal habitat and does not contain sufficient ponded water to support breeding red-legged frogs. Based on the information provided, fill at the south portal drainage will result in the permanent loss of 425 square meters (0.11 acre) of red-legged frog dispersal habitat. During construction, Caltrans will continue to monitor the south portal and fill disposal drainages. To minimize adverse effects to red-legged frogs and their habitat, the channel and banks upstream of the fill site will be delineated as Environmentally Sensitive Areas (ESA). No equipment or construction crews will be allowed to enter the ESA.

The Service hereby amends the amount or extent of take anticipated for this project to reflect that take in the amount of 10.78 acres will occur as a result of this project, of which 0.11 acre will be lost permanently. The Service concludes that the additional effects from this project are not likely to result in jeopardy to the red-legged frog, due to the small amount of additional habitat lost and the monitoring and conservation measures already in place for this project. As part of the original project, Caltrans has minimized the effect of incidental take from this project by creating a breeding pond on the Shamrock Ranch near the north portal and will remove sediment from Shamrock Ranch's north pond to create 0.4 acre of additional red-legged frog breeding habitat on the site following construction.

REINITIATION – CLOSING STATEMENT

This concludes formal consultation on the action(s) outlined in the (request or reinitiation request). As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals the agency action may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this opinion for the proposed amendment to the Devil's Slide biological opinion, please contact Cecilia Brown or Dan Buford of my staff at (916) 414-6625.

Sincerely,

for

Cay C. Goude
Assistant Field Supervisor

cc:
ARD (ES), Portland, OR
California Department of Transportation, Oakland, CA (Attn: Richard Vonarb)